REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1 and 3-6 are pending in the application. Claims 1 and 3-6 are amended; and Claim 2 is canceled by the present amendment. Support for amended Claims 1 and 3-6 can be found in the original specification, claims and drawings.[1] No new matter is presented.

In the outstanding Official Action, Claims 1-6 were rejected under 35 U.S.C. § 102(e) as anticipated by Pinckley et al. (U.S. Patent No. 6,983,026, hereinafter "Pinckley").

In response to the rejection based on Pinckley, Applicants respectfully submit that amended independent Claim 1 recites novel features clearly not taught or rendered obvious by the applied reference.

Amended independent Claim 1 relates to a transmitter which detects distortion components produced by a power amplifier, and uses the detected distortion components in predistorters to produce a compensation signal to cancel the distortion components at the power amplifiers.

The transmitter includes an input-side digital multi-port directional coupler (13) configured to divide and combine digital transmission signals of N-channels, and output N-channel signals to N transmission channels. N predistorters (21) are inserted in the N transmission channels, respectively, and provide compensating predistortions to the N-channel signals outputted from the input-side digital multi-port directional coupler (13). The transmitter also includes N transmitting parts (30), which are inserted in the N transmission channels, respectively, and convert output signals from the N predistorters (21) to N high-frequency signals, each of the N transmitting parts including a power amplifier (33) for amplifying power of the high-frequency signal. An output-side multi-port power combiner

[1] e.g., specification, at least at original Claim 2 and Fig. 3.

(40) divides and combines the N high-frequency signals to output N high-frequency transmission signals. N receiving parts (50) extract, from the N high-frequency signals, distortion components produced by the power amplifier and generate compensating signals which control the N predistorters (21). Based on the compensating signals, the N predistorters generate compensating predistortions and impart the compensating predistortions to the N-channel signals, respectively, to cancel the distortion components at the power amplifiers.

Specifically, amended independent Claim 1 recites, in part, a transmitter, comprising:

> ...N receiving parts configured to extract, from said N high-frequency signals, ***distortion components produced by the power amplifiers and configured to generate, based on said distortion components, compensating signals which control said N predistorters***, wherein
>
> based on said compensating signals, ***said N predistorters generate compensating predistortions and impart said compensating predistortions to said N-channel signals***, respectively, to cancel the distortion components at said power amplifiers.

Turning to the applied reference, Pinckley describes an apparatus for processing base band signals to provide low level signals for amplification that improve performance of a multi-channel transmitter.

Pinckley, however, fails to teach or suggest extracting ***distortion components produced by the power amplifiers, and generating, based on said distortion components, compensating signals which control said N predistorters***, as recited in amended independent Claim 1.

Specifically, col. 5, line 60-col. 6, line 9 of Pinckley describes a base band processing unit (205) that modifies output signals using a pre-distortion function that pre-distorts each of the output signals to reduce the effects of non-linearity cause by system components. As described at col. 7, lines 53-58, the outputs of a transfer matrix (211) (i.e., the inputs of power amplifiers 213) are used as inputs to perform correction at the correction matrix (206). Thus,

the compensation function (206) compensates for both the frequency response of up-conversion path (233, 237, 239) and the imbalance of in the first RF FTM (211). Therefore, the correction matrix (206) does not perform compensation for distortion components produced by the power amplifiers (213).

More specifically, as depicted in Figs. 2 and 8 of Pinckley, the predistortion feedback is provided at a position after the RF transform matrix (211) and before the power amplifiers (213). Therefore, Pinckley fails to teach or suggest extracting ***distortion components produced by the power amplifiers***, or ***generating, based on said distortion components, compensating signals which control said N predistorters*** to cancel the distortion components at the power amplifiers, as recited in amended independent Claim 1. Claim 1 further expressly recites that the distortion component is extracted from a high-frequency signal which has been amplified by a power amplifier.

Accordingly, Applicants respectfully request the rejection of Claim 1 under 35 U.S.C. § 102(e) be withdrawn. As amended Claims 3-6 depend from amended independent Claim 1, which is allowable for at least the reasons discussed above, it is also submitted that these claims patentably define over Pinckley.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1 and 3-6 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable action is therefore requested.

Respectfully submitted,

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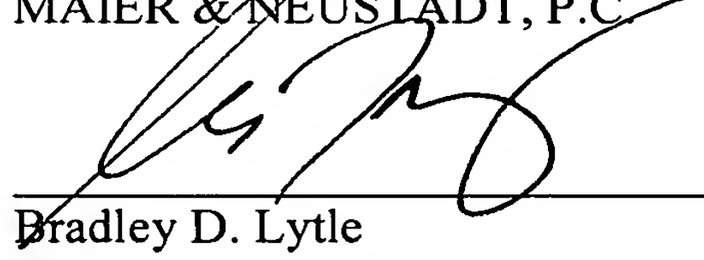

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